

HOW TO REPORT YOUR FACILITY LATITUDE AND LONGITUDE

There are four data elements to report for latitude and longitude:

- 1.5.g. Latitude
- 1.5.h. Longitude
- 1.5.i. Lat/Long Method
- 1.5.j. Lat/long Description

Choosing your Description

You will first need to choose your Lat/Long "**Description**" which represents the exact location of your latitude and longitude values. The most common Lat/Long "**Descriptions**" are "PG" for Plant Gate or entrance and "CE" indicates the Center of your facility. RMP*Submit and the User Manual contain a list of codes to be used for this element.

Choosing your Method

Next, you need to choose a "**Method**" for determining your Lat/Long. RMP*Submit and the User Manual contain a list of codes to be used for this element. There are four general methods to determine your site latitude and longitude: Global Positioning Systems (GPS); Geographic Information Systems (GIS); Internet-based address finders; and paper maps. These methods are described below in order of accuracy (GPS is the most accurate way to determine a lat/long, paper maps is the least accurate method). Although it is preferable that you use the most accurate method available to you, all four methods are acceptable.

1. **Global Positioning Systems (GPS).** If you have access to a GPS unit, take the reading at the place specified by the Lat/Long "**Description**" that you choose. Most GPS units allow you to choose between display in decimal degrees and degrees/minutes/seconds. You should choose degrees/minutes/seconds, since that is the required format for latitude and longitude. If you can only get the reading in decimal degrees, you will have to convert it (see conversion instructions below or RMP*Submit's conversion tool).

To answer 1.5.i. "**Method**" for determining Lat/Long , enter one of the values "G1" through "G7" from the list which represent specific types of GPS unit, or "GO" (GPS-Other/ unspecified).

2. **Geographic Information Systems (GIS).** If you have your own GIS, navigate to your street and pinpoint the exact location that you choose for your Lat/Long "**Description**" field (1.5.j). Your GIS should report (usually on a status bar) the latitude and longitude of the focus point or map marker. Your GIS should also allow a preference for display in degrees/minutes/seconds rather than decimal degrees. If you can only get the reading in decimal degrees, you will have to convert it (see conversion instructions below or RMP*Submit's conversion tool).
If you do not own a GIS, you can download a free "mini" GIS system called LandView™. It will give you a map of your county with lat/long coordinates. Visit the CEPPO Homepage at

<http://www.epa.gov/ceppo/tools.html> for more information.

To answer **1.5.i. "Method" for determining Lat/Long** on your RMP, enter "I4" which represents "Interpolation - Digital map source (TIGER): derived from a digital map, mapping software or mapping tool."

3. **Internet-based address finders.** There are numerous Internet sites for viewing maps and finding specific locations. The one that seems best suited for quick determination of latitude and longitude is at:

<http://www.etakguide.com/#FindLocation>

This system requests an address, and optionally a cross street. Since exact address matching is not available for many parts of the country, supplying a cross street helps the system to draw a map that is near your location. Once the map is drawn, click on the "Lat/Long" button above the map, then click on the map at the location that you choose for your Lat/Long **"Description"** field (1.5.j). The system will display the latitude and longitude in decimal degrees. You will have to convert to degrees/minutes/seconds (see conversion instructions below or RMP*Submit's conversion tool). Other Internet-based mapping tools can be found at:

<http://www.mapblast.com>

<http://tiger.census.gov/cgi-bin/mapbrowse-tbl>

To answer **1.5.i. "Method" for determining Lat/Long**, enter "I4" which represents "Interpolation - Digital map source (TIGER): derived from a digital map, mapping software or mapping tool."

4. **Paper maps.** Choose a map that shows a relatively small area, and that has latitude/longitude tick marks along the edges. A county map book with a small section of the county on each page, or a USGS topographic map is ideal. County map books are available in many public libraries, bookstores and office supply stores. USGS maps are available in many libraries or may be purchased directly from the USGS by submitting a written request to:

Distribution Branch of the USGS
P.O. Box 25286
Denver Federal Center
Denver, CO 90225
Phone: (303) 236-7477.

Do not use a common road atlas with one state map per page or state highway maps because they generally show too large an area to obtain adequate latitude/longitude value.

After finding your exact location on the map, see where that point lies in relation to the latitude and longitude tick marks. Latitude runs north-south and longitude runs east-west. As an example, if your latitude is half way between 38° 40' 00" (translated as 38 degrees, 40 minutes, 0 seconds), and 38° 50' 00", your latitude would be half way between the two latitude values, or 38° 45' 00". If your latitude is three-quarters of the way between the two tick marks, it would be 38° 47' 30". Perform the same exercise to determine longitude.

To answer **1.5.i. "Method" for determining Lat/Long**, enter "I1" which represents "Interpolation – Map: derived from a paper or other non-digital map."

Reporting Latitude and Longitude

Once you have your latitude and longitude values, you'll need to make sure they are in the proper format, you will report latitude and longitude coordinates in ***"degrees, minutes, and seconds."***

The format for the RMP is: Latitude: +/-D D M M S S . S Longitude: +/-D D D M M S S . S

Enter only numerical data. Do not preface numbers with letters such as N or W to denote the hemisphere. For RMP*Submit, the default for the hemisphere is "+" for east and north. However because "+" is assumed by the system, you must leave that space blank for east and north. For west and south, enter a negative, "-", as the first character. Enter both latitude and longitude to the nearest second.

Be careful not to reverse your latitude and longitude coordinates. Latitude in the 48 contiguous states ranges from 25° to 49°, while longitude ranges from 72° to 124°.

Converting decimal degrees to degrees/minutes/seconds

If your GIS, GPS, or Internet-based mapping tool provides latitude and longitude only in decimal degrees, you must convert to degrees/minutes/seconds. RMP*Submit has an automatic latitude/longitude conversion utility.

These instructions use the following decimal degree values as an example:

latitude	38.327654	[38.327654 degrees North Latitude]
longitude	-98.887435	[98.887435 degrees West Longitude]

Step one: The value for Degrees is the same for both decimal degrees and degrees/minutes/seconds. Use the number to the left of the decimal point for degrees. Reserve the remainder (after the decimal point) for steps two and three. For this example,

latitude degrees =	38	[38 degrees North Latitude]
longitude degrees =	-98	[98 degrees West Longitude]

Step two: The value for Minutes is the decimal portion of the degrees times 60. For this example,

latitude minutes:	60 minutes times .327654 = 19.65924, or 19 minutes
longitude minutes:	60 minutes times .887435 = 53.2461, or 53 minutes .

Use the numbers to the left of the decimal point for minutes. The remainder to the right of the decimal point are used to determine the seconds.

Step three: The value for Seconds is the decimal portion of the minutes calculation times 60. For this example,

latitude seconds:	60 seconds times .65924 = 39.5544 seconds
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longitude seconds: 60 seconds times .2461 = **14.766 seconds**

If your result contains more than one decimal place, you should round to a single decimal place.

End Result: The coordinates in degrees/minutes/seconds for this example are

latitude:	38° 19' 39.6"	[38 degrees 19 minutes 39.6 seconds north latitude]
longitude	-98° 53' 14.8"	[98 degrees 53 minutes 14.8 seconds west longitude]